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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/543,622	04/05/2000	Richard B. Diver JR.	SD-6358	6499

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EXAMINER

PRITCHETT, JOSHUA L

ART UNIT PAPER NUMBER

2872

DATE MAILED: 06/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/543,622

Applicant(s)

DIVER ET AL.

Examiner

Joshua L Pritchett

Art Unit

2872

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 August 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 4/00, 8/00.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 12 and 25 are rejected under 35 U.S.C. 102(b) as being anticipated by Nicolas (US 4,320,164).

Nicolas discloses a solar collector comprising a glass mirror (71) affixed to a front sheet (72) to make a glass/sheet laminate (Fig. 7); placing the glass/sheet mirror side down over a mandrel (61) of a specific curvature (Fig. 6); applying a coating expandable foam (77) on the sheet side of the laminate (Fig. 6); positioning a back sheet (74) such that the as the foam expands the foam comes in contact with a surface of the back sheet and forces the composite panel to adopt the inverse shape of the mandrel (Fig. 6); removing the frame from the back sheet and the composite panel from the mandrel (Fig. 7).

Claims 1, 2, 4-8, 10-16, 18-22 and 24-29 are rejected under 35 U.S.C. 102(a) as being anticipated by Diver "Sandwich Construction Solar Structural Facets".

Regarding claims 1, 12 and 25, Diver discloses a solar collector comprising a glass mirror affixed to a front sheet to make a glass/sheet laminate (page 2 col. 2); placing the glass/sheet mirror side down over a mandrel of a specific curvature (Fig. 1); applying a coating expandable foam on the sheet side of the laminate (page 2 col. 1); positioning a back sheet such that as the foam expands the foam comes in contact with a surface of the back sheet and forces the composite panel to adopt the inverse shape of the mandrel (page 2 col. 1); removing the frame from the back sheet and the composite panel from the mandrel. Removing the frame from the back sheet and the panel from the mandrel is inherently required to use the solar collector, because otherwise the mirror surface would not be able to receive solar radiation.

Regarding claims 2 and 13, Diver discloses a sealing strip between the glass mirror and the front sheet to minimize the accumulation of moisture between the glass mirror and the front sheet (page 2 col. 2).

Regarding claims 4, 18 and 27, Diver discloses the glass mirror comprising silver backing (page 2 col. 2).

Regarding claims 5, 19 and 28, Diver discloses the front sheet and the back sheet comprise carbon steel (Fig. 1).

Regarding claims 6, 20 and 29, Diver discloses the carbon steel of the front and back sheets comprise a gauge between approximately 24 and 28 gauge (Table 1).

Regarding claims 7 and 21, Diver discloses the core material comprises a honeycomb structure (page 2 col. 1).

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Regarding claims 8 and 22, Diver discloses the honeycomb structure comprises aluminum (page 2 col. 1).

Regarding claims 10 and 26, Diver discloses the foam is selected from a group of polystyrene, polyurethane and polyvinyl chloride (page 2 col. 1).

Regarding claim 11, Diver discloses the core material comprises a cellulose-based material (page 2 col. 1). Diver discloses the use of cardboard, which is a cellulose-based material.

Regarding claims 14 and 24, Diver discloses stacking a plurality of the composite panels atop a single, one-sided mandrel to allow simultaneous construction of solar collectors (page 3 col. 1).

Regarding claims 15 and 16, Diver discloses applying a vacuum to the composite panel in contact with the mandrel (page 2 col. 2).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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Claims 3, 9, 17 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Diver.

Regarding claims 3 and 17, Diver teaches the invention as claimed including the need to prevent moisture from permeating the sealing strip (page 2 col. 2) but lacks reference to the use of EPDM as the sealing strip. EPDM is an extremely well-known rubber sealant used with mirrors. Official Notice is taken. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the sealing strip of Diver made of EPDM for the purpose of preventing moisture from contacting the interface of the mirror and the front sheet as stated in Diver.

Regarding claims 9 and 23, Diver teaches the aluminum honeycomb structure comprises aluminum foil (page 5 col. 1). Diver lacks reference to the thickness of the foil. It is extremely well known in the art to form support structures of aluminum foil with a thickness of between **approximately** 0.015 and 0.004 inches. **Emphasis added.** It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have the aluminum foil of Diver have a thickness between approximately 0.015 and 0.004 inches for the purpose of supporting the weight of the mirror while remaining light enough to all easy transport.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Goela (US 5,071,596) teaches forming a curved mirror surface using a mandrel

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Tracey (US 4,963,012) teaches the use of a coating for flexible mirrors to prevent corrosion due to moisture.


Pitts (US 4,547,432) teaches a silver backed mirror with a front and back sheet being the same material.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joshua L Pritchett whose telephone number is 571-272-2318.

The examiner can normally be reached on Monday - Friday 7:00 - 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew A Dunn can be reached on 571-272-2312. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JLP 


DREW A. DUNN
SUPERVISORY PATENT EXAMINER